

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

PAUL NJUGUNA NJOROGÉ, Individually and
as Personal Representative of the Estate of
RYAN NJOROGÉ NJUGUNA, deceased,

Plaintiff,

v.

THE BOEING COMPANY, a Delaware
corporation; **ROSEMOUNT AEROSPACE,**
INC., a Delaware corporation;

Defendants.

No. _____

COMPLAINT AT LAW

TABLE OF CONTENTS

	<u>PAGE NO.</u>
I. INTRODUCTION	1
II. JURISDICTION AND VENUE	4
III. THE PARTIES.....	5
A. PLAINTIFF.....	5
B. DEFENDANTS	5
C. AGENCY & CONCERT OF ACTION	6
IV. STATEMENT OF FACTS	6
A. THE BOEING COMPANY RUSHED THE BOEING 737 MAX 8 TO PRODUCTION.....	6
B. BOEING INTRODUCED A FLIGHT CONTROL SYSTEM WHICH ADDRESSED ONE PROBLEM BUT CREATED ANOTHER	9
C. THE FEDERAL AVIATION ADMINISTRATION RECKLESSLY DELEGATED ITS REGULATORY OVERSIGHT TO BOEING.....	11
D. BOEING’S LEADERSHIP CREATED A CULTURE PUTTING PROFITS OVER SAFETY	13
E. BOEING CONDUCTED A FLAWED SAFETY ASSESSMENT OF THE MCAS AND FALSIFIED DATA TO THE FAA	15
F. BOEING REJECTED MULTIPLE OPTIONS TO MAKE ITS PLANE SAFER.....	18
G. BOEING MISREPRESENTED ITS AIRCRAFT TO PILOTS AND AIRLINES, DOWNPLAYING THE NEED FOR ESSENTIAL TRAINING.....	19
H. LION AIR FLIGHT JT 610 CRASHES AFTER PILOTS EXPERIENCE A FLIGHT CONTROL ISSUE	20
I. BOEING FAILED TO TAKE NECESSARY ACTION.....	21
J. THE FAA DOWNPLAYED THE SERIOUS SAFETY RISK IT KNEW EXISTED AFTER THE LION AIR FLIGHT 610 CRASH AND PLAINTIFF RELIED ON THIS TO THEIR DETRIMENT	25

K.	ETHIOPIAN AIRLINES FLIGHT 302 CRASHES KILLING ALL 157 PEOPLE ON BOARD	28
V.	CLAIMS FOR RELIEF	30
	COUNT I NEGLIGENCE (THE BOEING COMPANY)	34
	COUNT II BREACH OF WARRANTY (THE BOEING COMPANY)	34
	COUNT III STRICT LIABILITY (THE BOEING COMPANY)	37
	COUNT IV FAILURE TO WARN (THE BOEING COMPANY)	39
	COUNT V CIVIL CONSPIRACY (THE BOEING COMPANY)	42
	COUNT VI NEGLIGENCE (ROSEMOUNT AEROSPACE, INC.)	44
	COUNT VII STRICT LIABILITY (ROSEMOUNT AEROSPACE, INC.)	45
VI.	PRAYER FOR RELIEF	9
VII.	JURY DEMAND	47

Plaintiff **PAUL NJUGUNA NJOROGE**, Individually and as Personal Representative of the Estate of **RYAN NJOROGE NJUGUNA**, deceased, brings this action for damages on behalf of **RYAN NJOROGE NJUGUNA**, his estate, heirs, and survivors against Defendants **THE BOEING COMPANY (“BOEING”)** and **ROSEMOUNT AEROSPACE, INC. (“ROSEMOUNT”)** as follows:

I. INTRODUCTION

1. This action arises from the horrific crash of Ethiopian Airlines Flight 302 (“Flight 302”) on March 10, 2019 in which 157 people lost their lives. The aircraft involved in Flight 302 was a Boeing 737 MAX 8. This crash came less than five months after Lion Air Flight JT 610 – another Boeing 737 MAX 8 – crashed into the Java Sea on October 29, 2018, killing all 189 onboard.

2. Investigation into both crashes is ongoing, but the similarities in the aircraft and the investigative findings for the crashes thus far points to a common cause. Shortly after taking off and while attempting to climb, pilots for both aircraft reported flight control issues as the planes pitched up and down erratically throughout the sky. The flight paths and data released thus far for both aircraft show that the pilots were engaged in a terrifying tug-of-war with the plane’s automated systems as the pilots manually tried to climb while the computer system repeatedly caused the plane to dive with increasing nose-down trim against the pilot inputs. Pilots of both Flight 302 and Flight 610 lost their fight with **BOEING’s** flight computer, and hundreds of passengers and crew lost their lives due to **BOEING’s** flight computer driving the airplanes into the ground.



The Wreckage of Ethiopian Airlines Flight 302

3. **BOEING** installed the defective flight control system suspected to be the cause of both crashes to address changes in the aircraft's handling caused by the 737 MAX 8 aircraft's larger and more fuel-efficient engines. Both the design changes boosting fuel efficiency and the unsafe way in which **BOEING** designed and certified the flight control system were tools to make the 737 MAX 8 aircraft more competitive against rivals like the Airbus A320, which would in turn increase **BOEING's** sales and profits.

4. Blinded by its greed, **BOEING** haphazardly rushed the 737 MAX 8 to market, with the knowledge and tacit approval of the United States Federal Aviation Administration ("FAA"), while **BOEING** actively concealed the nature of the automated system defects. Numerous decisions by **BOEING's** leadership substantially contributed to the subject crash and demonstrate **BOEING's** conscious disregard for the lives of others, including but not limited to **BOEING's** role in: designing an aircraft with a powerful automated flight control system susceptible to

catastrophic failure in the event a single defective sensor; failing to properly inform pilots of the existence of the new flight control system and educate and train them in all aspects of its operation; failing to properly address the new system in the aircraft's flight manual; refusing to include key safety features as standard in the aircraft rather than optional upgrades; delivering 737 MAX 8 aircraft with a version of the flight control system that was materially different from the version presented to the FAA during certification; and failing to take appropriate action after **BOEING** learned that the 737 MAX 8 aircraft was not performing as intended or safely, as was made tragically clear with the crash of Lion Air Flight JT 610.

5. **BOEING's** decision to put profits over safety is further evident in **BOEING's** repeated claims that the 737 MAX 8 is so similar to its earlier models that it does not require significant retraining for those pilots familiar with the older generation of 737s. **BOEING** has insisted that retraining is not required, even after Lion Air Flight 610 crashed, because airlines would buy fewer **BOEING** aircraft if pilots needed to be retrained. In so doing, **BOEING** risked people's lives merely to improve its bottom line and must pay punitive damages to punish and deter **BOEING**, and others, from doing so again.

6. Equally culpable in the tragic loss of life, the FAA approved and/or certified **BOEING's** design for its new aircraft despite its substantial flaws because the FAA had negligently hired and/or trained its employees, and it knew or should have known that its employees were unfit to perform their job duties and responsibilities, including implementing and executing inspections and testing of the 737 MAX 8; and that a catastrophic plane crash was a foreseeable consequence. Further, after the initial Lion Air Flight 610 crash, the FAA negligently, recklessly, and/or unlawfully provided incomplete and inadequate warnings to pilots, passengers, and the public that severely understated and downplayed the serious known safety risk associated with continued flight of the 737 MAX 8. Moreover, it characterized the FAA airworthiness

directive as a “non-emergency” that would address and fix the known problem, all of which Plaintiff’s decedents and other passengers on Flight 302 relied on to their detriment, being duped into a false sense of security about riding on a 737 MAX 8. Sadly, these two entirely preventable airline crashes demonstrate that the FAA is ill-equipped to oversee the aerospace industry and will downplay serious hazards and safety risks to the public rather than sound the alarm about safety concerns, problems, issues and hazards that pose substantial, probable, and/or foreseeable risks to human life. **BOEING** and the regulators that enabled it must be held accountable for their reckless actions.

II. JURISDICTION AND VENUE

7. This Court has subject matter jurisdiction of this case pursuant to 28 U.S.C. § 1331(a) in that this matter arises under the laws and treaties ratified by the United States, including but not limited to the Convention for the Unification of Certain Rules for International Carriage by Air (“Montreal Convention”). This flight involves the international carriage of passengers between Ethiopia and Kenya, both of whom are signatories to the Montreal Convention, which specifically removes limitations on damages.

8. The Court also has subject matter jurisdiction of this dispute pursuant to 28 U.S.C. § 1332, as this case involves a dispute between Plaintiff, a Canadian citizen domiciled in Ontario, and Defendant corporations based in the State of Illinois, and the amount in controversy exceeds the jurisdictional minimum of this Court.

9. Venue is proper in this District pursuant to 28 U.S.C. § 1391 because defendant **BOEING** is a resident of this District and a substantial part of the events or omissions giving rise to the claim occurred in this District. Key decisions were made by **BOEING’s** corporate leadership in Chicago, including those decisions regarding the development of the 737 MAX, certification of

the aircraft, disclosures to airlines, and **BOEING's** actions and response in the wake the Lion Air Flight JT 610 crash.

III. THE PARTIES

A. PLAINTIFF

10. Decedent **RYAN NJOROGÉ NJUGUNA** (“**DECEDENT**”) was a passenger on board Ethiopia Flight 302 when it crashed on March 10. Plaintiff **PAUL NJUGUNA NJOROGÉ** is the next of kin of **DECEDENT**, and is the Personal Representative of the Estate of **RYAN NJOROGÉ NJUGUNA**, on his behalf and the behalf of his estate, heirs, survivors, and beneficiaries (“**PLAINTIFF**”). Both **DECEDENT** and **PLAINTIFF** were/are permanent residents of Canada with their principal and permanent residence in the Province of Ontario.

B. DEFENDANTS

11. At all times herein mentioned Defendant **THE BOEING COMPANY** is a Delaware corporation with its principal place of business in the State of Illinois. **BOEING** is, and at all relevant times was, registered with the Illinois Secretary of State as doing business in Illinois, and it does business in Illinois and in this Judicial District. **BOEING's** headquarters are located in this District where the relevant decisions and omissions giving rise to this incident were made, authorized, ratified and/or approved.

12. Defendant **ROSEMOUNT AEROSPACE, INC.** is a Delaware corporation with its principal place of business in the State of Minnesota. **ROSEMOUNT** is, and at all relevant times was, in the business of designing, manufacturing, assembling, distributing, marketing and supplying sensors used in **BOEING's** aircraft, including the particular angle of attack sensor that failed at the time of the subject incident. **ROSEMOUNT's** sensors would be embedded in aircraft sold to airlines located all over the world and in aircraft operating all over the world.

C. AGENCY & CONCERT OF ACTION

13. At all times mentioned herein, **DEFENDANTS**, and/or each of them, hereinabove, were the agents, servants, employees, partners, aiders and abettors, co-conspirators, and/or joint venturers of each of the other **DEFENDANTS** named herein and were at all times operating and acting within the purpose and scope of said agency, service, employment, partnership, enterprise, conspiracy, and/or joint venture, and each **DEFENDANT** has ratified and approved the acts of each of the remaining **DEFENDANTS**. Each of the **DEFENDANTS** aided and abetted, encouraged, and rendered substantial assistance to the other **DEFENDANTS** in breaching their obligations to **PLAINTIFF** as alleged herein. In taking action to aid and abet and substantially assist the commission of these wrongful acts and other wrongdoings complained of, as alleged herein, each of the **DEFENDANTS** acted with an awareness of his/her/its primary wrongdoing and realized that his/her/its conduct would substantially assist the accomplishment of the wrongful conduct, wrongful goals, and wrongdoing.

IV. STATEMENT OF FACTS

A. THE BOEING COMPANY RUSHED THE BOEING 737 MAX 8 TO PRODUCTION

14. **BOEING's** main competitor in the commercial aviation industry is Airbus. Airbus had been increasing market share for decades and eating into **BOEING's** sales. When Airbus launched its more fuel-efficient airliner, the A320neo, **BOEING** initially dismissed its anticipated appeal with airlines.

15. The chief executive of **BOEING's** commercial airplanes division, James F. Albaugh, told employees at a meeting in January 2011 that Airbus' decision to redesign its existing

aircraft with larger engines would be “a design change that will ripple through the airplane” and present significant challenges.¹

16. **BOEING’s** tune changed when it learned that some of its key customers, including American Airlines, would be placing orders with Airbus for their fuel-efficient aircraft. This ratcheted up pressure on **BOEING** to respond. Since the design of an entirely new jet would take too long, **BOEING** decided to create a more fuel-efficient alternative to its traditional 737NG aircraft – what would become the 737 MAX 8.

17. A former senior **BOEING** official reported that the company opted to build the 737 MAX 8, rather than an entirely new aircraft, because it would be “far quicker, easier and cheaper than starting from scratch, and would provide almost as much fuel savings for airlines.”²

18. In August 2011, **BOEING** launched the 737 MAX family of aircraft, a new iteration of the widely-used 737NG, designed to compete with Airbus’ A320neo. In designing the 737 MAX 8, it was vital to **BOEING’s** leadership that it could market the aircraft as simply an upgrade to its already certified 737NG and obtain regulatory approval from the FAA permitting pilots to operate the 737 MAX 8 aircraft without extensive simulation time or retraining.

19. On information and belief, the decision to design an aircraft which would obtain certification from the FAA, without the need for pilot retraining and the ambitious timeline for completion of the 737 MAX 8, was made by **BOEING** corporate leadership at its headquarters in Chicago.

20. Rick Ludtke, an employee at **BOEING** for 19 years and an engineer who helped design the 737 MAX 8 cockpit explained that “[a]ny designs we created could not drive any new

¹ David Gelles, Natalie Kitroeff, Jack Nicas, and Rebecca R. Ruiz, “Boeing 737 Max: A jet born of a frantic race to outdo a rival,” New York Times, March 24, 2019.

² Id.

training that required a simulator.” That was the first ground rule communicated to engineers designing the MAX. This created a chaotic environment for engineers. As Ludtke described: “The company was trying to avoid costs and trying to contain the level of change. They wanted the minimum change to simplify the training differences, minimum change to reduce costs, and to get it done quickly.”³

21. The need to minimize design changes served an important business need for **BOEING**. If airline pilots did not require costly and time-consuming training in the new aircraft because it was viewed as merely an update to the familiar 737NG, it would make the 737 MAX 8 cheaper for airlines to operate. This in turn would make the price for the 737 MAX 8 more competitive relative to the Airbus A320neo and far more profitable for **BOEING**.

22. Thus, **BOEING** needed the 737 MAX 8 aircraft to be more fuel efficient and also handle similarly to the 737NG. The MAX aircraft was able to achieve this new fuel efficiency, in part, due to the model’s larger engines, the CFM LEAP-1B Engine. However, adding the larger engines triggered cascading design and engineering changes for the aircraft, the same ripple of changes James Albaugh, **BOEING**’s commercial airplanes chief executive, had predicted back in 2011 when criticizing Airbus’ A320neo.

23. The larger engines could not be mounted in the same location as the engines on the 737NG so they had to be moved farther forward on the plane, which in turn required moving the forward landing gear. The more powerful engines, coupled with their new location, caused the 737 MAX 8 to handle differently from the 737NG by changing the plane’s lift characteristics. A 737NG pilot operating the 737 MAX 8 would find that the 737 MAX 8 would ascend faster and at a higher angle, increasing the risk of a stall.

³ Id.

24. As **BOEING's** business leaders required engineers to contain the level of change to avoid pilot retraining and make the 737 MAX 8 more marketable, **BOEING** now needed to engineer a band-aid to fix the aircraft's handling issues created by the larger and more powerful engines.

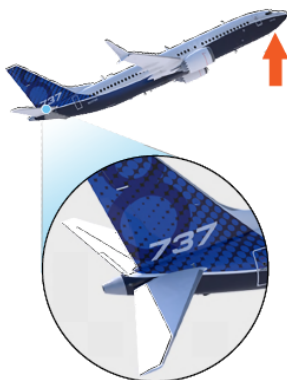
B. BOEING INTRODUCED A FLIGHT CONTROL SYSTEM WHICH ADDRESSED ONE PROBLEM BUT CREATED ANOTHER

25. To address this risk of a stall and to make the plane handle like prior models of the 737, **BOEING** included a new automated flight-control system in the MAX aircraft, the Maneuvering Characteristics Augmentation System (MCAS).

26. The MCAS collected data from a single sensor on the fuselage called the angle-of-attack sensor ("AOA sensor") which measures the angle between the wing of the plane on the oncoming airflow at the front of the plane.⁴ If the AOA sensor registers that the angle is too high – that the plane is climbing too sharply – then the MCAS activates, automatically swiveling the horizontal tail of the plane to move the plane's nose down, as can be seen on the following graphic:

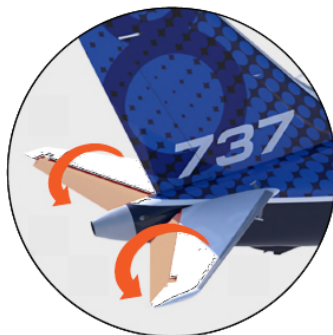
Maneuvering Characteristics Augmentation System (MCAS) as Intended by Boeing

If the plane's **nose is too high**, the plane risks stalling



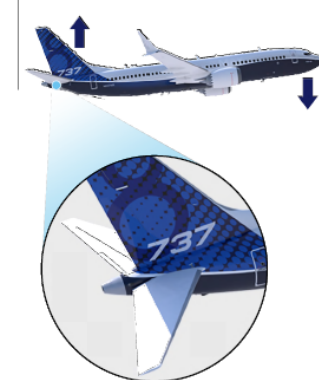
Normal Position

MCAS rotates the horizontal stabilizer trim down to a max of 2.5° causing the tail end to rise upward



Downward Rotation

Thereby the nose drops to a safe position and the horizontal trim returns to normal



Normal Position

⁴ On information and belief, the AOA sensor onboard the **BOEING** 737 MAX involved in both Flight 610 and Flight 302 was designed, tested, engineered, and manufactured by Defendant **ROSEMOUNT**.

27. The MCAS was not programmed to use data from both of the airplane's AOA sensors to help validate the AOA data and protect against single point failures. This meant that if the single AOA sensor used as input to the MCAS malfunctioned and erroneously believed the plane was climbing too quickly, then there was no means of detecting its erroneous condition and excluding that data prevent the MCAS from improperly intervening and forcing the plane to dive.

28. The MCAS was intended to automatically adjust the pitch of the plane to avoid stalling with the MAX's more powerful engines when the plane was being controlled manually by the pilot. The pilot would not need to manually activate the MCAS, nor would the aircraft inform the pilot that the MCAS system was making pitch trim inputs.

29. Since the MCAS was intended to operate in the background without pilot knowledge, **BOEING** did not even inform pilots that the MCAS existed. The MCAS was not disclosed in the aircraft's flight manual either. Pilots would only learn indirectly about the MCAS when the plane began automatically fighting their pitch commands, often at low altitudes with little time to react and resolve the issue.

30. A **BOEING** executive met with pilots' union representatives in November 2018, after the Lion Air crash. According to pilot Dennis Tajer who was in attendance, **BOEING** executives tried to excuse their failure to disclose this system by explaining that they did not wish to "inundate" pilots with too much information about the new plane.⁵ Frustrated, pilot unions have described **BOEING's** actions in failing to disclose the software as a "break of trust."⁶

⁵ <https://www.nytimes.com/2019/03/16/business/boeing-max-flight-simulator-ethiopia-lion-air.html>

⁶ Id.

C. **THE FEDERAL AVIATION ADMINISTRATION FAILED TO PROPERLY HIRE AND TRAIN ADEQUATE TECHNICAL STAFF TO COMPETENTLY PERFORM AND FULFILL ITS INSPECTION AND TESTING OBLIGATIONS**

31. As one sign of how under-resourced and ill-equipped FAA staff were to evaluate the 737 MAX 8's features, the FAA relied heavily on **BOEING** to validate the safety of its own aircraft. In 2005, the FAA adopted the Organization Designation Authorization ("ODA"), allowing **BOEING** to designate its own employees who will approve design work on the FAA's behalf.

32. Even with this delegation of responsibility by the FAA to **BOEING**, the Department of Transportation auditors in 2012 found that the FAA had not done enough to "hold Boeing accountable," presumably because FAA employee were ill-equipped, under-qualified, and/or insufficiently trained to actually perform this necessary job function and responsibility. This is confirmed by a later 2015 report from the Department of Transportation's inspector general, which faulted the FAA for lacking "an effective staffing model" and "risk-based oversight process."⁷

33. Further, FAA employees reported poor morale and disagreement relating to the FAA's treatment of **BOEING**, and fear of retaliation if they spoke up.⁸

34. As it was ceding more and more of its regulatory authority to **BOEING**, the FAA conducted its certification of the 737 MAX 8, with the aircraft finally certified on March 9, 2017. However, due to the under-qualified and insufficiently trained nature of the FAA staff, the certification process was proceeding slower than **BOEING** desired and FAA technical experts reported receiving pressure from management to speed up certification of the MAX aircraft

⁷ Id.

⁸ <https://www.bloomberg.com/news/articles/2019-03-18/boeing-had-too-much-sway-checking-own-planes-faa-workers-warned>

because the development of the MAX was nine months behind Airbus' A320neo.⁹ Without time, resources, and/or the proper tools to carefully scrutinize the safety of the 737 MAX 8, the FAA knew or should have known the serious safety implications of failing to retain fit staff and failing to properly equip and/or train its staff to competently perform its job.

35. It is clear management at the FAA knew that its technical staff was ill-equipped, under-qualified, and/or insufficiently trained to handle inspections and testing of the 737 MAX 8 because it recognized that it had “retained too much” work internally and pressured FAA safety engineers to re-evaluate what was delegated to **BOEING** relating to certification of the 737 MAX 8. As recounted to the Seattle Times by a former FAA safety engineer who was directly involved in certifying the MAX, halfway through the certification process, “we were asked by management to re-evaluate what would be delegated. Management thought we had retained too much at the FAA.”¹⁰

36. While more and more work was being delegated to **BOEING** for it to evaluate itself, the work that was retained by the FAA was still not being done properly because its technical staff was ill-equipped, under-qualified, and/or insufficiently trained. The former FAA engineer went on to tell the Seattle Times that “[t]here wasn’t a complete and proper review of the documents.”¹¹ As **BOEING** was running out of time to deliver the 737 MAX 8 to airlines, FAA managers in some instances would sign off on documents themselves without waiting for the FAA technical staff to complete their review.

37. Therefore, the FAA approved and/or certified **BOEING’s** design, production, and/or manufacturing for its new aircraft despite its substantial flaws because the FAA had

⁹ Id.

¹⁰ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

¹¹ Id.

negligently hired and/or trained its employees, and it knew or should have known that if its employees were unfit to perform and/or could not competently perform their job duties and responsibilities, including implementing and executing inspections and testing of the 737 MAX 8, that a catastrophic plane crash would foreseeably result.

D. BOEING'S LEADERSHIP CREATED A CULTURE PUTTING PROFITS OVER SAFETY

38. In the mad rush to get the MAX 8 certified and orders filled to airlines, **BOEING** leadership placed enormous pressure on its engineers to produce a finished product. The New York Times interviewed several of the engineers and designers working on the MAX, who described this frantic pace of the MAX's development:

- a. An engineer working on the MAX said that "[t]he timeline was extremely compressed ... It was go, go, go."¹²
- b. A former designer working on the MAX's flight controls described how the design team had at times produced 16 technical drawings a week, double the normal rate. The designer understood the message from management to be: "We need something now."¹³
- c. A technician who assembles wiring on the MAX said that he received sloppy blueprints in the first few months of development and was told that the instructions for the wiring would be cleaned up later in the process. However, his internal assembly designs for the MAX apparently still include omissions today, such as not specifying which tools to use to install a certain wire, a situation that could lead to

¹² New York Times, *Boeing 737 Max: A jet born of a frantic race to outdo a rival*; by David Gelles, Natalie Kitroeff, Jack Nicas, Rebecca R. Ruiz, March 24, 2019.

¹³ Id.

a faulty connection. This is quite different from standard procedures because normally such blueprints include intricate instructions.¹⁴

39. On information and belief, the unreasonable expectations placed on engineers and designers by the corporate business leadership centered in Chicago created an environment at **BOEING's** facilities which was ripe for mistakes and wherein employees were reluctant to raise concerns that may delay certification and production of the MAX.

40. A lawsuit filed in state court in South Carolina on March 16, 2019 by a former **BOEING** Quality Assurance Conformity Manager, calls into question the integrity of **BOEING's** testing and inspections procedures. This manager was tasked with inspecting all newly manufactured aircraft for compliance with internal engineering and safety specifications. Each incidence of non-conformity that **BOEING** inspectors encounter is supposed to be documented by **BOEING** as well as all repairs and subsequent inspections.

41. According to the manager's complaint, at one of **BOEING's** manufacturing plants, **BOEING** agents and/or employees engaged in improper conduct including:

- a. "Goldplating" which is repeating a test until it is successful and then having the records show that the test was successful on the first attempt;
- b. Knowingly using out of date engineering specifications;
- c. Knowingly using uncertified technicians to perform maintenance and repairs;
- d. Violating the internal **BOEING** policy and procedures that were put in place to achieve final approval of each stage of production and make the plane immediately saleable;

¹⁴ Id.

- e. Disabling the automated system that notified all pertinent employees of mandatory inspections of newly manufactured aircraft; and
- f. Submitting conformities without documented repairs.

42. The manager also alleges that when he tried to document non-conforming aircraft equipment, he was threatened, retaliated against, subjected to a hostile work environment, and eventually terminated.

43. On information and belief, this manager's allegations relating to violations of safety standards, falsified inspection records, and an environment of distrust and retaliation, are representative of wrongful conduct and violation of safety protocols at other **BOEING** manufacturing facilities. Plaintiffs further allege that these issues were known, encouraged and/or ratified by **BOEING's** leadership and contributed to a culture that suppressed voices raising the alarm about safety in furtherance of **BOEING's** profit-driven focus.

E. BOEING CONDUCTED A FLAWED SAFETY ASSESSMENT OF THE MCAS AND FALSIFIED DATA TO THE FAA

44. In addition to the questions about **BOEING's** design and manufacturing procedures at the time the MAX was undergoing design and certification, the protocols for **BOEING's** safety assessment of the MCAS showed glaring errors.

45. The MCAS was designed to swivel the horizontal tail to push the nose of the plane down to avert a stall. **BOEING** tested this system, but the safety analysis understated the power of the system.

46. **BOEING** submitted documentation to the FAA indicating that the MCAS could only move the horizontal tail a maximum of 0.6 degrees. However, when the MAX 8 was put into service, the MCAS was capable of moving the tail 2.5 degrees, more than four times than the 0.6 degrees stated in the initial safety analysis provided to the FAA. The version of the MCAS that

BOEING embedded in its aircraft and sold all over the world was materially different and far more powerful than what **BOEING** represented to the FAA and other regulatory agencies. The FAA did not learn that the MCAS would move the horizontal tail 2.5 degrees until after 189 people were killed in the Lion Air crash.

47. The safety analysis also failed to account for how the MCAS could reset itself after each time a pilot responded. This meant that a malfunctioning MCAS would not just cause a single downward movement of 2.5 degrees but could dip the nose of the aircraft 2.5 degrees lower multiple times as the pilot tries to regain control. Without correction, two cycles of the MCAS at the 2.5-degree limit could cause the aircraft to reach its maximum nose-down trim position. Peter Lemme, a former **BOEING** flight controls engineer, explained to the Seattle Times that, since the MCAS can reset each time it is used, “it effectively has unlimited authority.”¹⁵

48. Based on **BOEING**’s own flawed assumptions – that the MCAS’ maximum authority was 0.6 degrees – **BOEING**’s System Safety Analysis classified the MCAS as a “major failure” in normal flight and a “hazardous failure” in the event of an extreme maneuver, such as a banked descending spiral.¹⁶ A “major failure” indicates that the system’s failure could cause physical distress to people on the plane, but not death. A “hazardous failure” could cause serious or fatal injuries to a small number of passengers. One level above hazardous failure is “catastrophic failure,” which represents the loss off the plane with multiple fatalities.

49. The failure classification system is important because it drives whether a flight control system can rely on a single sensor input or must have two or three. Systems with a

¹⁵ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

¹⁶ Id.

consequence of failure classified as a “major failure” must have a probability of failure less than one in 100,000. Typically, such systems are allowed to rely on a single input sensor.¹⁷

50. In contrast, systems classified as “hazardous failure” have more severe consequences of failure and therefore must have a probability of failure less than one in 10 million. Systems classified as “hazardous failure” typically must have at least two separate input channels as a backup in the event one sensor fails.¹⁸

51. With the MCAS being classified as a “hazardous failure,” it should have had a redundant back-up system. Instead the MCAS could be triggered by a reading from a single AOA sensor and, once triggered, it had unlimited authority to pitch the nose of the aircraft down.

52. **BOEING** had a second AOA sensor on the airplane that it could have used to provide redundancy and safety, and which it is now using in its MCAS software “fix” after these two fatal accidents, but it chose not to do so during design and certification to save whatever time and money it could. **BOEING** did the same thing in its design of the 737 auto-throttle system prior to the 2009 Turkish Airlines Flight 1591 crash in Amsterdam – reliance on a single sensor input instead of two readily available inputs – and after that accident quickly issued a software fix to prevent recurrence. **BOEING** should have learned from that accident to never try to save money via single sensor reliance on critical systems, but once again did so on the 737 MAX MCAS design, costing **DECEDENT** and others their lives.

53. As **BOEING’s** former flight controls engineer, Peter Lemme, told the Seattle Times: “A hazardous failure mode depending on a single sensor, I don’t think passes muster.”¹⁹

¹⁷ Id.

¹⁸ Id.

¹⁹ Id.

54. **BOEING** has repeatedly and intentionally violated this system safety design principle and egregiously abused its FAA certification designee position to allow it to pass certification muster, resulting in hundreds of **BOEING** airplane passenger deaths and injuries over the years.

F. BOEING REJECTED MULTIPLE OPTIONS TO MAKE ITS PLANE SAFER

55. Despite the MCAS' glaring flaws, **BOEING** had two available safety features that could mitigate the risk of the AOA sensor failing and causing an uncontrolled dive, but consciously chose to make these safety features optional add-ons for airlines and charge extra. One such feature is an angle of attack indicator, which would display the readings from the AOA sensor.²⁰ Without this upgrade, pilots do not have a reading of what the AOA is registering, making it more difficult to identify an AOA malfunction.

56. The other safety feature is called a disagree light. The MAX 8 comes outfitted with two AOA sensors at the front of the plane, but the MCAS only takes readings from one sensor on any given flight, leaving the system vulnerable to a single point of failure. Upgrades to the MCAS software coupled with the installation of a disagree light in the cockpit would alert pilots if the two AOA sensors register readings at odds with the other.

57. Aviation analyst, Bjorn Fehrm, told the New York Times that these safety features are "critical" and "cost almost nothing for the airlines to install."²¹ Upgrades to the MCAS software could also program the system to turn off in the event the two AOA readings are materially out-of-sync.²²

²⁰ <https://www.nytimes.com/2019/03/21/business/boeing-safety-features-charge.html>

²¹ Id.

²² <https://www.nytimes.com/2019/03/21/business/boeing-safety-features-charge.html>

58. Despite the potential for the AOA sensor failing and wrongfully activating the MCAS to force the plane downward, **BOEING** did not install the AOA indicator or disagree light as standard. Instead, **BOEING** charges a premium for these essential safety features.²³

G. BOEING MISREPRESENTED ITS AIRCRAFT TO PILOTS AND AIRLINES, DOWNPLAYING THE NEED FOR ESSENTIAL TRAINING

59. With the MAX 8 certified by the FAA, **BOEING** began delivering aircraft all over the world starting in May 2017. The MAX 8 was an incredibly popular and profitable aircraft for **BOEING**.²⁴

60. As **BOEING** had intended, pilots transitioning from the older 737s to the 737 MAX 8 were not required by the FAA to receive extensive training on the 737 MAX aircraft because it obtained the same “type rating” as early 737 models. This was a primary selling point for the MAX as it was presented to airlines. On its website, **BOEING** represented to airlines that “as you build your 737 MAX fleet, millions of dollars will be saved because of its commonality with the Next-Generation 737.”²⁵

61. Due to **BOEING’s** representations regarding the MAX’s commonality with the 737NG, pilots have reported that they were given just 56 minutes of training on an iPad about the differences between the new **BOEING** MAX planes and the older 737s. The MCAS system was not discussed during this training.

62. With simulators for the new aircraft unavailable at the time the 737 MAX was pressed into service, pilots with United Airlines put together their own 13-page guide to the 737

²³ Id.

²⁴ <https://www.newyorker.com/news/our-columnists/how-did-the-faa-allow-the-boeing-737-max-to-fly>

²⁵ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

MAX, but even this guide failed to mention the MCAS, leaving pilots unprepared to deal with a sudden and unexpected dive by the automated systems in the aircraft.²⁶

63. American Airlines pilot union representative and 737 pilot, Dennis Tajer, explained: “When you find out that there are systems on it that are wildly different that affect the performance of the aircraft, having a simulator is part of a safety culture...It can be the difference between a safe, recoverable flight and one that makes the newspapers.”²⁷

H. LION AIR FLIGHT JT 610 CRASHES AFTER PILOTS EXPERIENCE A FLIGHT CONTROL ISSUE

64. On October 29, 2018, Lion Air flight JT 610 (“Flight 610”) departed Jakarta, Indonesia. Shortly after takeoff, the pilots complained of flight control issues as the plane repeatedly pitched down despite the pilots’ efforts to climb. The pilots reported unreliable airspeed and altitude readings. In the audio recordings from the cockpit, the rattle of a stick shaker can be heard, a device used to alert pilots of a potential stall, which can occur when a plane ascends too quickly.

65. The pilots requested permission to return to Jakarta, which was granted, but the plane did not return. Satellite data showed the plane rising and falling repeatedly – more than 20 times – as the pilots struggled to wrest control back from the automated systems. Within just 12 minutes of taking off, Flight 610 crashed into the Java Sea, killing all 189 people onboard.

66. The cockpit voice recording recovered from the wreckage revealed that while the plane danced perilously across the sky, one of the pilots flipped through a technical manual in an

²⁶ <https://www.nytimes.com/2019/03/16/business/boeing-max-flight-simulator-ethiopia-lion-air.html>

²⁷ *Id.*

attempt to identify the problem while the other pilot prayed.²⁸ The pilots appeared unaware of the MCAS and its potential role in overriding their manual controls.²⁹

67. Preliminary analysis of the crash and data obtained from the plane's flight data recorder (FDR) show that one of the AOA sensors produced a reading that was at least 20 degrees different from the other AOA sensor as the plane took off and began its climb. This strongly suggests that a malfunction in the AOA sensor feeding information to the MCAS triggered an unwarranted activation of the MCAS system at low altitudes, causing the plane's nose to pitch down.

I. BOEING FAILED TO TAKE NECESSARY ACTION

68. Following the tragic crash of Lion Air Flight 610, **BOEING** knew or had reason to suspect that a malfunction in the AOA sensor and MCAS may have been responsible. The FAA issued an Emergency Airworthiness Directive ("AD") on November 7, 2018 identifying the potential danger presented by the flight control system, but not providing clear instruction on what pilots should do in the event of an AOA failure:

"This AD was prompted by analysis performed by the manufacturer showing that if an erroneously high single angle of attack (AOA) sensor input is received by the flight control system, there is a potential for **repeated nose-down trim commands of the horizontal stabilizer**. We are issuing this AD to address this potential resulting nose-down trim, which could **cause the flight crew to have difficulty controlling the airplane**, and lead to **excessive nose-down altitude, significant altitude loss, and possible impact with terrain.**"

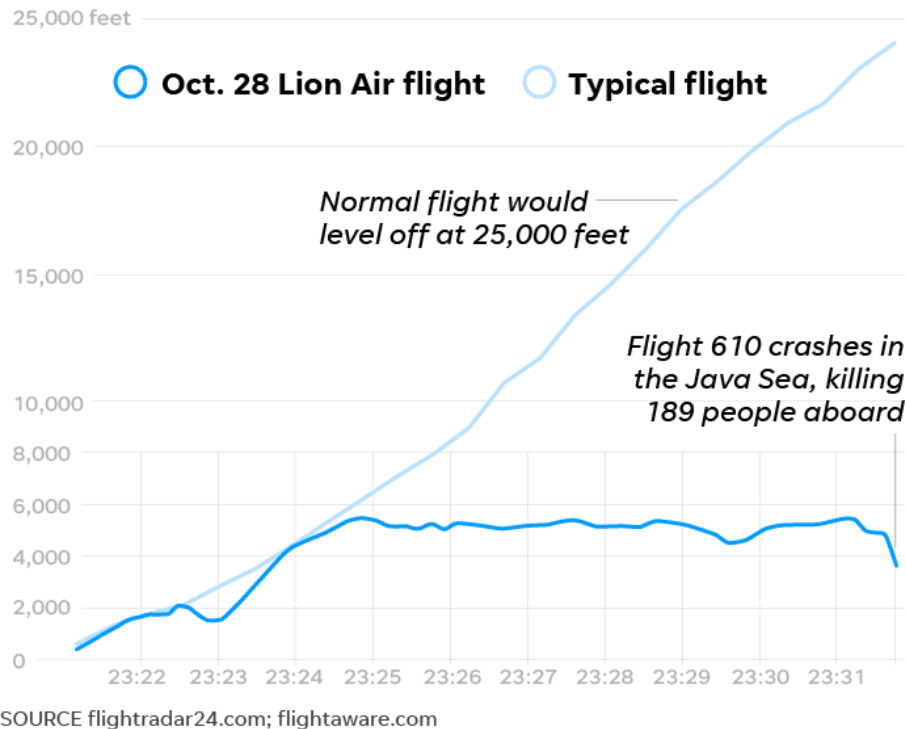
69. The flight path of Lion Air flight 610 suggests that the malfunctioning AOA sensor and nose-down commands were a factor in the crash:

²⁸ <https://www.nytimes.com/2019/03/20/world/africa/ethiopian-airlines-boeing.html>

²⁹ <https://www.nytimes.com/2019/03/20/world/asia/lion-air-crash-boeing.html>

How Lion Air flight 610's takeoff compares with a typical flight

Altitudes in 10 minute period:



70. **BOEING** issued the Airworthiness Directive and began investigating a software patch to address the issue, but did not insist on further training of pilots to deal with the defective AOA sensor or MCAS software. **BOEING** also downplayed the significance of the threat presented by the MCAS and did not call for any aggressive action to prevent further incidents.

71. **BOEING** has maintained that the failure of the MCAS could be handled in the same way as a standard “stabilizer runaway,” a malfunction which occurs when the Trimmable Horizontal Stabilizer (THS) on the aircraft tail fails to stop at the selected position and continues to deflect up or down.

72. Pilots and aviation experts have challenged **BOEING’s** characterization because the MCAS failure does not behave like a runaway stabilizer. First, with a runaway stabilizer, there is continuous uncommanded movement of the tail. In contrast, the movement of the tail is not continuous in a MCAS failure: pilots are able to counter the nose down movement, only to have

the MCAS move the tail once again. Second, the MCAS alters the control column response to the stabilizer movement. Pulling back on the column normally interrupts any stabilizer nose-down movement, but with MCAS operating that control column function is disabled.³⁰

73. **BOEING's** attempts to deflect blame onto purportedly poorly trained pilots wrongfully minimizes **BOEING's** responsibility for these crashes. It is foreseeable that pilots would be confused by MCAS' control over the 737 MAX 8 as the system's nose-down commands were different from a common stabilizer problem and because pilots were not told the MCAS existed or how it functioned. When seconds matter, the confusion caused by **BOEING's** defective and unsafe design, and failure to inform pilots, is the difference between life and death.

74. Both before and after the Lion Air crash, several pilots anonymously submitted complaints on the Aviation Safety Reporting System ("ASRS") which described similar flight control issues and unanticipated dives with the 737 MAX 8 aircraft. One such report submitted by a pilot in November 2018 – after the Lion Air crash and before the Ethiopian Airlines crash – describes the pilot's reaction to learning of the MCAS system:

"I think it is unconscionable that a manufacturer, the FAA, and the airlines would have pilots flying an airplane without adequately training, or even providing available resources and sufficient documentation to understand the highly complex systems that differentiate this aircraft from prior models. The fact that this airplane requires such jury rigging to fly is a red flag. Now we know the systems employed are error prone—even if the pilots aren't sure what those systems are, what redundancies are in place, and failure modes.

I am left to wonder: what else don't I know? **The Flight Manual is inadequate and almost criminally insufficient.** All airlines that operate the MAX must insist that Boeing incorporate ALL systems in their manuals."

³⁰ See <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

75. Shortly after Flight 610 crashed, and after learning of numerous complaints regarding similar close calls, **BOEING** knew that hundreds of the of its 737 MAX 8 aircraft were still in use carrying passengers all over the globe, which presented a substantial risk that a similar incident could occur without appropriate and immediate intervention.

76. Despite this knowledge and the gravity of the risks presented to passengers, crew, and the public at large from imperiled airplanes flying overhead, **BOEING** consciously and intentionally failed to act, and/or acted without the urgency commensurate with the risk of harm presented by its defective and dangerous aircraft.

77. Instead, **BOEING** kept a keen eye on the record revenue the 737 MAX 8 was generating and the backlog of orders it had yet to fill. Just a few months after sharing condolences for the victims of Lion Air Flight 610, **BOEING's** twitter account posted the following:



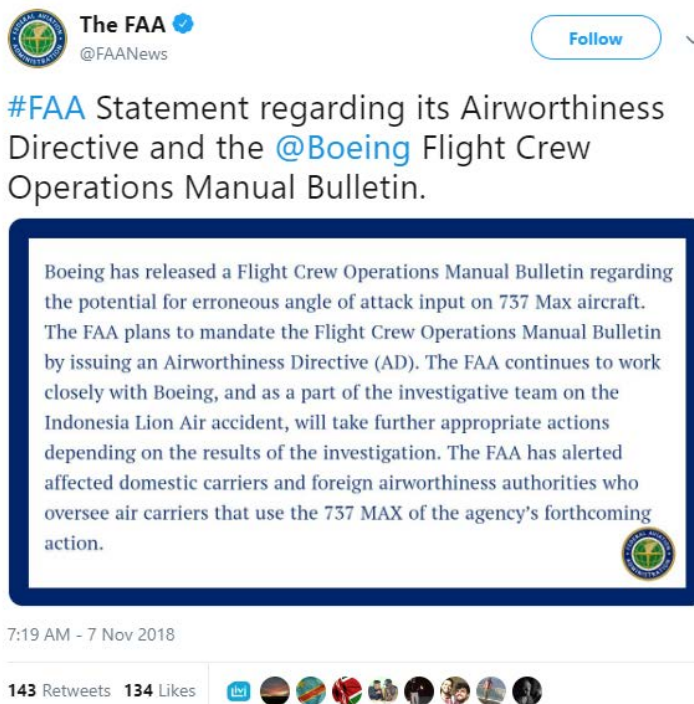
78. **PLAINTIFF** is informed and believes and on such information and belief alleges that **BOEING** chose not to respond to the Flight 610 crash with the appropriate degree of urgency or with appropriate safety steps because it feared doing so would result in financial loss to

BOEING if airlines grounded their aircraft or had to retrain their pilots. Instead, motivated by profit, **BOEING** downplayed the danger presented by its defective and dangerous aircraft, creating a false sense of security and ensuring that the 737 MAX 8 would still be utilized to carry passengers despite the presence of the defective and dangerous AOA sensor and MCAS.

J. THE FAA DOWNPLAYED THE SERIOUS SAFETY RISK IT KNEW EXISTED AFTER THE LION AIR FLIGHT 610 CRASH AND PLAINTIFF RELIED ON THIS TO HER DETRIMENT

79. The FAA aided and abetted **BOEING** in this scheme to downplay the clear and present danger to the public presented by **BOEING's** dangerous and defective aircraft because **BOEING** shared a close relationship with the FAA, and the federal government generally, such that the FAA consciously and intentionally turned a blind eye to **BOEING's** reckless conduct.

80. On November 7, 2018, at 7:19 AM, the FAA posted the following warning to the public on its Twitter Feed. This warning purposefully omits the word “Emergency” when describing the FAA directive, and it also presents no language indicating any safety risk or hazard associated with continued flight of the 737 MAX 8 or with being a passenger on a 737 MAX 8.



81. Over five hours later, the FAA posted a different and new warning to the public on its Twitter Feed. Recognizing its negligent, reckless, and/or purposeful omission of the word “emergency” from the first post, this Twitter post made sure to include the term “emergency” twice. This post provided somewhat more information to the public, but still fell severely short of informing the public of any serious safety risk and misled the public as to the nature and character of the problem, the level of risk associated with the problem, as well as the action necessary to fully remediate the problem. The post presented the hazard in the 737 MAX 8 as if any airline and pilot could easily remediate the hazard by a simple revision to “the airplane flight manual” which all “operators have three days to revise,” lulling the public into a false sense of security that all known safety hazards with the 737 MAX 8 were insignificant and had been remediated, and that it was safe for passenger transportation.



82. To make matters worse, the FAA posted a media release to its website seven days later on November 14, 2018, titled “FAA Statement on Boeing Model 737-8 and -9 Airplanes.” The FAA took a step backward and again omitted the word “emergency” entirely from the statement. It also failed to inform the public of any serious safety risk and misled the public as to the nature and character of the problem, the level of risk associated with the problem, as well as the action necessary to fully remediate the problem. It also made a further, affirmative statement aimed at inducing the public to believe safety concerns with the 737 MAX 8 were insignificant and not serious by concluding the media release in the following manner: “The FAA is not doing a safety probe separate from the ongoing Lion Air Accident investigation of which we, the NTSB and Indonesian officials are a part.” (emphasis added). Notably, this “FAA Statement” still appears on the “News and Updates” portion of the FAA website.

[FAA Home](#) ▶ [News](#) ▶ [News & Updates](#)

FAA Statement on Boeing Model 737-8 and -9 Airplanes

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The existing [FAA Airworthiness Directive \(AD\)](#) (PDF) identifies existing flight crew procedures to be used in those circumstances. The FAA and Boeing continue to evaluate the need for software and/or other design changes to the aircraft including operating procedures and training as we learn more from the ongoing investigation. The FAA is not doing a safety probe separate from the ongoing Lion Air Accident investigation of which we, the NTSB and Indonesian officials are a part.

Page last modified: November 14, 2018 1:28:38 PM EST

83. The close relationship between the FAA and **BOEING** is clear from the connections present and former **BOEING** executives have cultivated. After Lion Air Flight 610

crashed and at the very moment that the FAA should have been providing adequate, transparent, and sufficient public safety advisories and warnings regarding the 737 MAX 8, former **BOEING** executive, Patrick Shanahan was elevated to Acting Secretary of Defense. Following her resignation from the post of United States Ambassador to the United Nations, Nikki Haley, is slated to join **BOEING's** board of directors. **BOEING** reportedly donated \$1 million to the President of the United States' inauguration. It has also been reported **BOEING's** CEO personally called the President following the deadly Flight 610 and Flight 302 crashes to advocate against the grounding of the 737 MAX.³¹

84. **DECEDENT** and other passengers on Flight 302 relied on these media posts by the FAA to their detriment, duped into a false sense of security about riding on a 737 MAX 8.

K. ETHIOPIAN AIRLINES FLIGHT 302 CRASHES KILLING ALL 157 PEOPLE ON BOARD

85. On March 10, 2019, Flight 302 took off from Addis Ababa towards its destination of Nairobi, Kenya. Within one minute of its departure, the pilot calmly radioed that he was having flight control problems. Within three minutes, now panicked, the pilot requested permission to return back to Addis Ababa. The plane was accelerating abnormally and oscillating up and down. Shortly thereafter, all communication with Flight 302 stopped and the plane violently crashed into a field, killing all 157 people aboard, including **DECEDENT**.

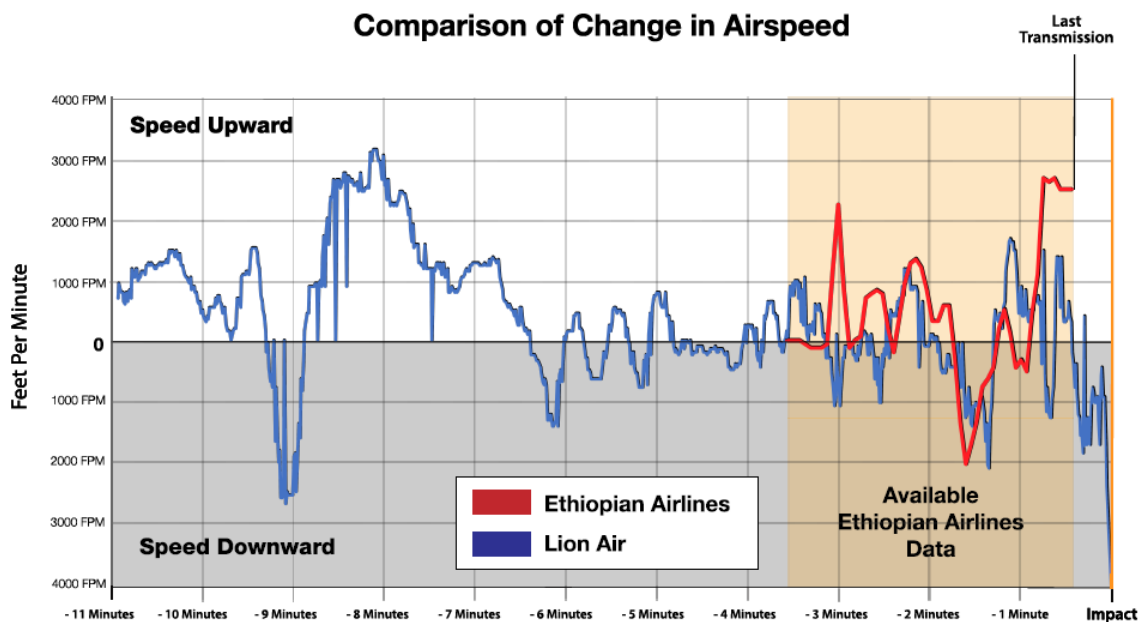


By Scott Reinhard | Source: Path data from Flightradar24

³¹ See <https://www.vox.com/policy-and-politics/2019/3/13/18263719/boeing-ceo-dennis-muilenburg-trump-tweet-call>

86. The similarity between Flight 302 and the Flight 610 and data released to date suggests that both aircraft experienced an erroneous AOA reading and activation of the MCAS. On Flight 302, the aircraft's nose began to pitch down just 450 feet above the ground. The jack screws from the horizontal tail stabilizer were recovered from both crashes and both showed that the planes had been oriented in a dive with the nose pointing down. Both pilots reported flight control issues and could not maintain a steady altitude or speed with similarly erratic flight paths before crashing.

The following side-by-side comparison reveals the striking similarities between the two doomed aircraft in changes in vertical speed:



87. Regulators finally decided to ground the 737 MAX 8 aircraft in the wake of the Flight 302 crash to allow for a MCAS software upgrade and safety assessment to be conducted. The Department of Transportation, with assistance from the FBI, are now investigating the MAX's certification process, a federal grand jury probe has been empaneled, and Congressional hearings are underway.

88. Whistleblowers have now come forward reporting that safety inspectors with the FAA, including those in the Aircraft Evaluation Group (AEG) responsible for evaluating the safety of the 737 MAX 8, lacked the proper training and certifications to do their jobs. To make matters worse, information obtained from whistleblowers purportedly indicates that the FAA was aware that its inspectors lacked proper training and certification as early as August 2018, well before the crashes of Flight 610 and Flight 302.

V. CLAIMS FOR RELIEF

COUNT I
NEGLIGENCE
(THE BOEING COMPANY)

89. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

90. At all relevant times hereinabove set forth, Defendant **BOEING** was the designer, manufacturer, distributor and/or seller of the **BOEING** 737 MAX 8 aircraft. Defendant **BOEING** was, at all times relevant, in the business of designing, testing, manufacturing, selling, assembling, building, distributing, marketing, and/or inspecting aircraft as suitable and safe for passenger air transportation, including the subject **BOEING** 737 MAX 8 that crashed in Ethiopia on March 20, 2019.

91. At all relevant times hereinabove set forth, Defendant **BOEING** operated, supervised, managed, and/or oversaw the training facility that trained Ethiopian Airlines' pilots to fly the **BOEING** 737 MAX 8, and knew or should have known of the unfitness of Ethiopian Airlines pilots' to safely operate the **BOEING** 737 MAX 8 for passenger air travel.

92. At all times hereinabove set forth, **BOEING** breached its duty of care to **DECEDENT** as a passenger aboard Flight 302 with respect to the design, manufacture, inspection,

testing, assembly, certification, distribution, and/or sale of a safe, airworthy aircraft; including the failure to train, instruct, and/or issue advisory warnings necessary to assure the safe operation, control, management, and/or maintenance of the aircraft. **BOEING's** acts and/or omissions include, but are not limited to the following:

- a. designing, manufacturing, assembling, and/or certifying an aircraft with an anti-stall system controlled by a single AOA sensor which was susceptible to failure without redundant systems;
- b. designing, manufacturing, assembling, and/or certifying an aircraft with a flight control system susceptible to erroneous information from the AOA sensor, and failing to install AOA indicators and/or AOA disagree lights as standard features rather than optional upgrades;
- c. designing, manufacturing, assembling, and/or certifying an aircraft with a flight control system that would initiate a dangerous automated dive without any command from a pilot and without a means to promptly override the automated dive;
- d. marketing and selling the 737 MAX 8 as an analog to **BOEING's** 737NG to consciously and intentionally induce airlines to avoid the time-consuming retraining of airline pilots with the knowledge that the MAX 8 contained a new and potentially dangerous MCAS automated flight control system;
- e. failing to provide adequate warning with regard to the 737 MAX 8's MCAS and the risk of an automated dive without any command from a pilot, or clear instruction to promptly override such an MCAS automated dive;
- f. failing to conduct a thorough and accurate safety assessment of the aircraft, including **BOEING's** failure in its safety assessment to account for the degree to

- which the MCAS could move the horizontal stabilizer of the aircraft and failure to account for the resetting of the automated dive after each command from a pilot;
- g. failing to properly train pilots on the new automated MCAS systems on the 737 MAX 8;
 - h. failing to properly train pilots to identify an AOA sensor failure and MCAS input;
 - i. failing to properly train pilots to disengage the stabilizer trim motor on the 737 MAX 8 in the event of an AOA sensor failure or unanticipated dive;
 - j. designing, assembling, and distributing a flight manual that did not warn of the risks presented by the MCAS, faulty AOA sensors, or automated dives;
 - k. designing, manufacturing, assembling, and/or certifying an airplane flight manual that failed to provide clear instruction or procedures on how to promptly override an automated MCAS dive;
 - l. failing to promptly issue a software patch to address the risk of malfunctioning AOA sensors and automated MCAS dives following the October 29, 2018 crash of Lion Air Flight JT 610;
 - m. failing to ground all 737 MAX 8 aircraft following the crash of Lion Air Flight JT 610 until such a software patch and/or other safety procedures could be implemented;
 - n. failing to properly warn pilots, airlines, and the public of the risk of malfunctioning AOA sensors and automated MCAS dives following the crash of Lion Air Flight JT 610.

93. As a direct and legal result of Defendant **BOEING's** negligence, carelessness, gross negligence, recklessness, and/or otherwise wrongful acts and/or omissions hereinabove set forth, **DECEDENT** died in the crash of Flight 302.

94. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

95. As a direct and legal result of the wrongful acts and/or omissions of Defendant **BOEING**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

96. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

97. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

98. The potential harm to airline passengers, pilots, crews, and the public from the 737 MAX 8 was objectively foreseeable both in nature and in scope and were subjectively known to **BOEING** for all of the aforementioned reasons, including but not limited to: **BOEING's** own safety assessment of the AOA sensor and MCAS during development of the 737 MAX 8 which revealed potential problems with the system; the evidence that flight control issues caused the crash of Lion Air Flight 610 and death of 189 people; complaints lodged by pilots in the ASRS database regarding the performance of the MCAS, the lack of clear instruction and training, and the incidence of unexpected MCAS dives and flight control issues; and **BOEING's** identification of a software upgrade to address problems with the AOA sensors and MCAS in the weeks and months prior to the crash of Flight 302.

99. As set forth above and as will be shown by proof, there is a high degree of certainty that **PLAINTIFF** has suffered those injuries and damages, and that there is an extremely close connection between those injuries and damages and **BOEING's** conduct. A high degree of moral blame is attached to **BOEING's** conduct, and the policy of preventing future harm justifies both the recognition of the existence of a duty of care owed by **BOEING** to **PLAINTIFF** and the imposition of all damages described above.

100. Based on the foregoing, **BOEING** acted willfully, wantonly, with oppression, fraud, malice, and/or with a knowing, conscious disregard for the rights and/or safety of others, such that **PLAINTIFF** requests that the trier of fact, in the exercise of sound discretion, award **PLAINTIFF** additional damages for the sake of example and sufficient to punish **BOEING**, for its despicable conduct, in an amount reasonably related to **PLAINTIFF's** actual damages and **BOEING's** financial condition, yet sufficiently large enough to be an example to others and to deter **BOEING** and others from engaging in similar conduct in the future.

COUNT II
BREACH OF WARRANTY
(THE BOEING COMPANY)

101. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

102. **BOEING** was the designer, manufacturer, distributor and/or seller of the Boeing 737 MAX 8, and/or its component parts, involved in the subject crash.

103. Prior to the crash of Flight 302, **BOEING** expressly and/or impliedly warranted and represented that the subject **BOEING** 737 MAX 8 aircraft, including its component parts and instruments, and in conjunction with the instructions and warnings given by **BOEING**, was airworthy, of merchantable quality, both fit and safe for the purpose of commercial air travel for

which it was designed, intended and used. Additionally, **BOEING** further warranted that the subject aircraft, and its component parts, was free from all defects.

104. **BOEING** breached said warranties in that the subject aircraft was not airworthy, of merchantable quality, or fit and safe for the purposes for which it was designed, intended and used, and free from all defects as set forth above. The aircraft, and its component parts, were in substantially similar condition to its original condition at delivery to **ETHIOPIAN AIRLINES**.

105. **DECEDENT**, as a passenger of Flight 302, was an intended third-party beneficiary of **BOEING's** warranties that Flight 302 (the **BOEING 737 MAX 8** and its component parts) was airworthy, of merchantable quality, both fit and safe for the purposes for which it was designed, intended and used, and free from all defects.

106. **DECEDENT** reasonably relied on these warranties to **DECEDENT's** detriment.

107. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

108. As a direct and legal result of the wrongful acts and/or omissions of Defendant **BOEING**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

109. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

110. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

111. The potential harm to airline passengers, pilots, crews, and the public from the 737 MAX 8 was objectively foreseeable both in nature and in scope and was subjectively known to **BOEING** for all of the aforementioned reasons, including but not limited to: **BOEING's** own safety assessment of the AOA sensor and MCAS during development of the 737 MAX 8 which revealed potential problems with the system; the evidence that flight control issues caused the crash of Lion Air Flight 610 and death of 189 people; complaints lodged by pilots in the ASRS database regarding the performance of the MCAS, the lack of clear instruction and training, and the incidence of unexpected MCAS dives and flight control issues; and **BOEING's** identification of a software upgrade to address problems with the AOA sensors and MCAS in the weeks and months prior to the crash of Flight 302.

112. As set forth above and as will be shown by proof, there is a high degree of certainty that **PLAINTIFF** has suffered those injuries and damages, and that there is an extremely close connection between those injuries and damages and **BOEING's** conduct. A high degree of moral blame is attached to **BOEING's** conduct, and the policy of preventing future harm justifies both the recognition of the existence of a duty of care owed by **BOEING** to all **PLAINTIFFS** and the imposition of all damages described above.

113. Based on the foregoing, **BOEING** acted willfully, wantonly, with oppression, fraud, malice, and/or with a knowing, conscious disregard for the rights and/or safety of others, such that **PLAINTIFF** requests that the trier of fact, in the exercise of sound discretion, award **PLAINTIFF** additional damages for the sake of example and sufficient to punish **BOEING** for its despicable conduct, in an amount reasonably related to **PLAINTIFF's** actual damages and

BOEING's financial condition, yet sufficiently large enough to be an example to others and to deter **BOEING** and others from engaging in similar conduct in the future.

COUNT III
STRICT LIABILITY
(THE BOEING COMPANY)

114. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

115. **BOEING** designed, manufactured, distributed and/or sold the **BOEING 737 MAX 8**, and its components parts, involved in the incident. **DEFENDANT** was in the business of designing, testing, manufacturing, selling, assembling, building, distributing, marketing, and/or inspecting aircraft as suitable for passenger air transportation, including the subject **BOEING 737 MAX 8**, and its component parts, that crashed in Ethiopia on March 10, 2019.

116. At all times relevant hereinabove set forth, the subject **BOEING 737 MAX 8** aircraft, and its component parts, was being operated by Ethiopian Airlines and used for the purposes of which it was manufactured, designed, inspected, sold and intended to be used, in a manner reasonably foreseeable to **BOEING**.

117. At all times relevant hereinabove set forth, the subject **BOEING 737 MAX 8**, and its component parts, were defective, dangerous, unsafe, and not airworthy by reason of **BOEING's** defective manufacture, design, warning systems, inspections, testing, service, and/or maintenance of the subject aircraft and its component parts, as set forth above. The aircraft, and its component parts, were in substantially similar condition to its original condition at delivery to Ethiopian Airlines.

118. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

119. As a direct and legal result of the wrongful acts and/or omissions of Defendant **BOEING**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

120. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

121. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

122. The potential harm to airline passengers, pilots, crews, and the public from the 737 MAX 8 was objectively foreseeable both in nature and in scope and were subjectively known to **BOEING** for all of the aforementioned reasons, including but not limited to: **BOEING's** own safety assessment of the AOA sensor and MCAS during development of the 737 MAX 8 which revealed potential problems with the system; the evidence that flight control issues caused the crash of Lion Air Flight 610 and death of 189 people; complaints lodged by pilots in the ASRS database regarding the performance of the MCAS, the lack of clear instruction and training, and the incidence of unexpected MCAS dives and flight control issues; and **BOEING's** identification of a software upgrade to address problems with the AOA sensors and MCAS in the weeks and months prior to the crash of Flight 302.

123. As set forth above and as will be shown by proof, there is a high degree of certainty that **PLAINTIFF** has suffered those injuries and damages, and that there is an extremely close connection between those injuries and damages and **BOEING's** conduct. A high degree of moral

blame is attached to **BOEING's** conduct, and the policy of preventing future harm justifies both the recognition of the existence of a duty of care owed by **BOEING** to **PLAINTIFF** and the imposition of all damages described above.

124. Based on the foregoing, **BOEING** acted willfully, wantonly, with oppression, fraud, malice, and/or with a knowing, conscious disregard for the rights and/or safety of others, such that **PLAINTIFF** requests that the trier of fact, in the exercise of sound discretion, award **PLAINTIFF** additional damages for the sake of example and sufficient to punish **BOEING** for its despicable conduct, in an amount reasonably related to **PLAINTIFF's** actual damages and **BOEING's** financial condition, yet sufficiently large enough to be an example to others and to deter **BOEING** and others from engaging in similar conduct in the future.

COUNT IV
FAILURE TO WARN
(THE BOEING COMPANY)

125. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

126. Defendant **BOEING** designed, manufactured, distributed, and/or sold the **BOEING 737 MAX 8** involved in the incident. Defendant **BOEING** was in the business of designing, testing, manufacturing, selling, assembling, building, distributing, marketing, and/or inspecting aircraft as suitable for passenger air transportation, including the subject **BOEING 737 MAX 8** that crashed in Ethiopia on March 10, 2019.

127. At all times relevant hereinabove set forth, the subject **BOEING 737 MAX 8** aircraft was being operated by Ethiopian Airlines and used for the purposes of which it was manufactured, designed, inspected, sold, and intended to be used, in a manner reasonably foreseeable to Defendant **BOEING**.

128. At all times relevant hereinabove set forth, the subject **BOEING** 737 MAX 8 was defective, dangerous, unsafe, and not airworthy by reason of Defendant **BOEING's** defective manufacture, design, warning systems, inspections, testing, service, and/or maintenance of the subject aircraft as set forth above.

129. At all times relevant hereinabove set forth, **BOEING** had knowledge that the subject **BOEING** 737 MAX 8 was defective, dangerous, unsafe, and not airworthy, and in particular, **BOEING** had knowledge of the unreasonably unsafe design of the AOA sensor and automated MCAS, as well as the potential life and death risks of such a failure in these systems.

130. At all times relevant hereinabove set forth, the risks of failure of the **BOEING** 737 MAX 8 due the aircraft's unreasonably dangerous and defective design presented a substantial danger when the aircraft is used or misused in an intended or reasonably foreseeable way.

131. Ordinary consumers, including but not limited to airlines, flight crew, and passengers, would not have recognized the potential risks presented by the aircraft's unreasonably dangerous and defective design.

132. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

133. As a direct and legal result of the wrongful acts and/or omissions of Defendant **BOEING**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

134. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

135. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

136. The potential harm to airline passengers, pilots, crews, and the public from the 737 MAX 8 was objectively foreseeable both in nature and in scope and were subjectively known to **BOEING** for all of the aforementioned reasons, including but not limited to: **BOEING's** own safety assessment of the AOA sensor and MCAS during development of the 737 MAX 8 which revealed potential problems with the system; the evidence that flight control issues caused the crash of Lion Air Flight 610 and death of 189 people; complaints lodged by pilots in the ASRS database regarding the performance of the MCAS, the lack of clear instruction and training, and the incidence of unexpected MCAS dives and flight control issues; and **BOEING's** identification of a software upgrade to address problems with the AOA sensors and MCAS in the weeks and months prior to the crash of Flight 302.

137. As set forth above and as will be shown by proof, there is a high degree of certainty that **PLAINTIFF** has suffered those injuries and damages, and that there is an extremely close connection between those injuries and damages and **BOEING's** conduct. A high degree of moral blame is attached to **BOEING's** conduct, and the policy of preventing future harm justifies both the recognition of the existence of a duty of care owed by **BOEING** to **PLAINTIFF** and the imposition of all damages described above.

138. Based on the foregoing, **BOEING** acted willfully, wantonly, with oppression, fraud, malice, and/or with a knowing, conscious disregard for the rights and/or safety of others,

such that **PLAINTIFF** requests that the trier of fact, in the exercise of sound discretion, award **PLAINTIFF** additional damages for the sake of example and sufficient to punish **BOEING** for its despicable conduct, in an amount reasonably related to **PLAINTIFF**'s actual damages and **BOEING**'s financial condition, yet sufficiently large enough to be an example to others and to deter **BOEING** and others from engaging in similar conduct in the future.

COUNT V
CIVIL CONSPIRACY
(THE BOEING COMPANY)

139. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

140. Defendant **BOEING** entered into an agreement with the FAA, and its agents, employees, and/or directors, and/or other persons and/or entities to accomplish by concerted action either an unlawful purpose or a lawful purpose by unlawful means.

141. **BOEING** and its co-conspirators committed tortious and/or unlawful acts in furtherance of this agreement, including but not limited to, deceiving the public as to the safety of the 737 MAX 8 aircraft and its component parts and systems, certifying the aircraft and the MCAS as safe based upon false and/or inaccurate information, failing to provide clear instruction in flight manuals or informing pilots as to automated systems embedded in the 737 MAX 8 aircraft, denying technical experts the necessary time or resources to thoroughly evaluate the 737 MAX 8 aircraft, and compelling technical experts to certify the aircraft despite their concerns about the safety of the 737 MAX 8, all in violation of applicable laws, regulations, and mandatory duties.

142. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

143. As a direct and legal result of the wrongful acts and/or omissions of Defendant **BOEING**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

144. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

145. As a further direct and legal result of the wrongful conduct of **BOEING** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

146. The potential harm to airline passengers, pilots, crews, and the public from the 737 MAX 8 was objectively foreseeable both in nature and in scope and were subjectively known to **BOEING** for all of the aforementioned reasons, including but not limited to: **BOEING's** own safety assessment of the AOA sensor and MCAS during development of the 737 MAX 8 which revealed potential problems with the system; the evidence that flight control issues caused the crash of Lion Air Flight 610 and death of 189 people; complaints lodged by pilots in the ASRS database regarding the performance of the MCAS, the lack of clear instruction and training, and the incidence of unexpected MCAS dives and flight control issues; and **BOEING's** identification of a software upgrade to address problems with the AOA sensors and MCAS in the weeks and months prior to the crash of Flight 302.

147. As set forth above and as will be shown by proof, there is a high degree of certainty that **PLAINTIFF** has suffered those injuries and damages, and that there is an extremely close connection between those injuries and damages and **BOEING's** conduct. A high degree of moral

blame is attached to **BOEING's** conduct, and the policy of preventing future harm justifies both the recognition of the existence of a duty of care owed by **BOEING** to **PLAINTIFF** and the imposition of all damages described above.

148. Based on the foregoing, **BOEING**, acted willfully, wantonly, with oppression, fraud, malice, and/or with a knowing, conscious disregard for the rights and/or safety of others, such that **PLAINTIFF** requests that the trier of fact, in the exercise of sound discretion, award **PLAINTIFF** additional damages for the sake of example and sufficient to punish **BOEING**, for its despicable conduct, in an amount reasonably related to **PLAINTIFF's** actual damages and **BOEING's** financial condition, yet sufficiently large enough to be an example to others and to deter **BOEING** and others from engaging in similar conduct in the future.

COUNT VI
NEGLIGENCE
(ROSEMOUNT AEROSPACE, INC.)

149. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

150. At all relevant times hereinabove set forth, Defendant **ROSEMOUNT** owed a duty to the occupants of **BOEING's** 737 MAX 8 aircraft and the general public, including the **DECEDENT**, to exercise reasonable care to properly develop, design, engineer, test, manufacture, produce, process, supply, deliver, monitor, market, label, adequately warn, recommend, advertise, and/or sell angle of attack sensors, and/or refrain from introducing area of attack sensors into the stream of commerce and for the use in 737 MAX 8 aircraft, including the subject aircraft.

151. The defective conditions in the Angle of Attack sensor, as discussed above, and the consequent crash of Flight 302, were legally caused by the negligence, gross negligence, wrongdoing, tortious conduct, careless acts, and omissions of Defendant **ROSEMOUNT** in the development, design, engineering, testing, manufacturing, production, processing, supplying,

delivery, monitoring, marketing, labeling, and selling, and **ROSEMOUNT's** failure to warn and failure to take remedial appropriate remedial action with respect to any and all known dangerously defective conditions.

152. As a direct and legal result of Defendant **ROSEMOUNT's** negligence, carelessness, gross negligence, recklessness, and/or otherwise wrongful acts and/or omissions hereinabove set forth, **DECEDENT** died in the crash of Flight 302.

153. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

154. As a direct and legal result of the wrongful acts and/or omissions of Defendant **ROSEMOUNT**, hereinabove alleged, **PLAINTIFF** suffered and continues to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

155. As a further direct and legal result of the wrongful conduct of **ROSEMOUNT** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

156. As a further direct and legal result of the wrongful conduct of **ROSEMOUNT** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

COUNT VII
STRICT LIABILITY
(ROSEMOUNT AEROSPACE, INC.)

157. **PLAINTIFF** incorporates and re-alleges each of the paragraphs set forth above as though fully set forth herein.

158. At all relevant times hereinabove set forth, Defendant **ROSEMOUNT** was the designer, manufacturer, engineer, distributor, and/or seller of aerospace products, including Angle of Attack sensors, who hold and have held themselves out to the public as having superior knowledge, skill and expertise in the design, testing, engineering, manufacture, and distribution of aerospace sensors for commercial aircraft and, in the course of its business, Defendant **ROSEMOUNT** designed, tested, manufactured, engineered, and caused to be placed into the stream of commerce, a product known as an Angle of Attack sensor for utilization in the **BOEING 737 MAX 8** aircraft.

159. Defendant **ROSEMOUNT** expressly or impliedly warranted that the Angle of Attack sensor was fit for its intended use in commercial aircraft, being free of defects in their design and/or maintenance and, further, Defendant **ROSEMOUNT** marketed, sold, distributed, and caused to be introduced into the stream of commerce by sale to Defendant **BOEING**. The Angle of Attack sensor was in substantially similar condition to its original condition at delivery to **BOEING**.

160. Defects in the Angle of Attack sensor were a legal cause of the subject air crash, and the defects made the subject aircraft unreasonably dangerous for travel.

161. As a direct and legal result of the wrongful acts and/or omissions hereinabove set forth, **DECEDENT** suffered pre-impact injury and death, including fear of impending and imminent death, and **PLAINTIFF** has been damaged by the death of **DECEDENT**.

162. As a direct and legal result of the wrongful acts and/or omissions of Defendant **ROSEMOUNT**, hereinabove alleged, **PLAINTIFF** suffered and continue to suffer the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, and/or moral support from **DECEDENT**, as well as other pecuniary injuries including grief, sorrow, and mental suffering in an amount to be determined at trial.

163. As a further direct and legal result of the wrongful conduct of **ROSEMOUNT** set forth above, **PLAINTIFF** incurred funeral and/or burial expenses and/or related medical expenses in an amount according to proof at trial.

164. As a further direct and legal result of the wrongful conduct of **ROSEMOUNT** set forth above, **PLAINTIFF** suffered economic losses, including but not limited to the loss of financial support, and/or the loss of household services in an amount according to proof of trial.

VI. PRAYER FOR RELIEF

WHEREFORE, **PLAINTIFF** prays for judgment against the **DEFENDANTS** and each of them as follows:

- A. For general damages in an amount according to proof at trial, and beyond the jurisdictional minimum of this Court;
- B. For economic and property losses, in an amount according to proof at trial;
- C. For damages for the Estate of **RYAN NJOROGE NJUGUNA** due to pre-impact injuries and losses;
- D. For interest upon any judgment entered as provided by law;
- E. For all costs of suit incurred herein;
- F. For such other and further relief as the court may deem just and proper.

WHEREFORE, **PLAINTIFF** prays for judgment against Defendant **BOEING** on Counts I through V as follows:

- A. Exemplary damages in an amount according to proof.

VII. JURY DEMAND

PLAINTIFF demands a trial by jury as to all claims in this action.

Dated: April 29, 2019

s/ Robert A. Clifford

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